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SUMMARY

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NEW METHODS OF TEXTILE TECHNOLOGY

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NEW METHODS OF TEXTILE TECHNOLOGY
(Summary)

1. Weaving on hydraulic jet looms has been tested extensively in large-scale operation, On an extensive soale, an assortment has been manufactured ranging from the finer fabrics (number of ends 75 threads in warp and 75 threads in weft, and material with titre 15 den in both warp and weft) up to heavier sorts (nuber of ends 48 threads in warp and 46 threads in weft, from material with titre 2 x 40 den in warp and 2 x 120 den in weft). Also polyamide material, shrunk or unshrunk, has been used, rayon or staple material supplied by various manufacturers. This was, in the first place, the Czechoslovak Silon and Soviet Kapron, further the Swiss Nylon (manufacturer Nylsuisse viskose Emmenbrücke and Bodany-Feldmühle), the Belgian Nylon (manufacturer Fabelta-Tubize plant), the French Nylon (manufacturer Somona, Lyons), the Dutch Enkalon (manufacturer Algemene Kanstzijde-Arnhelm), the West German Perlon (manufacturer Vereinigte Glanzstoff Fabriken, Wuppertal), as well as the Japanese polyamide fibre (manufacturer Toyo Rayon) and the Italian Ortalion (manufacturer S.A.Bemberg). Besides these products, also other extra-light fabrics have been produced, from material with 10 den titre (monophile with number of ends 142 threads in warp and 120 threads in weft) as well as heavier fabrics such as silon filter cloths weighing 245 grams per sq. metre. The processing costs (i.e. the total costs of production minus the price of the material) have been cut down, on an average, to 2/3 of the cost of weaving on automatic shuttle looms. The quality of the fabric is very good indeed. The finishing plants and the consumers express the opinion that the quality of polyamide fabrics produced on jet looms is definitely superior to the quality of fabrics produced on

automatic shuttle looms. This holds true, in particular, of fabrics with high density from fine materials, e.g. of monophiles having 10,15 or 20 den titres.

2. The pneumatic jet looms have been tested so far to a substantially smaller extent. On looms of this type, fabrics have been made from staple yarns, in plain or twill weave, with a density of up to 34 threads in the warp while using all the current counts of yarn. The material in the weft has been tested within a range of numbers metric 17-65. On an average, compared to plants equipped with shuttle looms a 30 % increase in the productivity of labour has been obtained.

3. The manufacture of nonwoven fabrics by the knitting-through method and on the ARACHNE machines has a universal character. It permits to produce diverse knitted-through fabrics from various raw materials and their mixing for various uses, by a very short procese, embracing only a small part of the spinning operation, while weaving, including the entire preparation, has been replaced by the highly productive knitting-through process. An entire range of fabrics is being produced embracing not only thermal and soundinsulating materials and interlinings, but also home textiles, upholstery fabrics, decorative textiles and apparel fabrics. The processing costs (i.e. the costs of the production minus the price of the raw materials) are reduced to from one half to one third of the cost required for the manufacture of dassical fabrics, and in many instances it is feasible to introduce less expensive materials, such as viscose. Furthermore, capital expenditure required for building given production capacities is reduced to about one third of the expenditure required for the building of plants of the same capacity equipped with traditional machinery.

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